

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 2, and 9-14, and ADD claim 15 in accordance with the following:

1. (Previously Presented) A method of manufacturing an outer race used in a constant velocity universal joint of a tripod type, said constant velocity universal joint comprising a cup body and a shaft extending axially outwardly from a bottom of the cup body in a direction opposite to an open end thereof, said cup body having an inner peripheral surface formed with three axially extending track grooves, said cup body further including a radially outwardly protruding wall portion, aligned with each of the track grooves, and a radially inwardly depressed wall portion aligned with a reduced diameter portion of a peripheral wall of the cup body between each of the track grooves, said protruding and depressed wall portions being so defined as to alternate with each other in a direction substantially circumferentially of the cup body, each of the reduced diameter portions of the peripheral wall of the cup body adjacent the open end of the latter having a chamfered portion defined at a peripheral lip region of the open end of the cup body,

said method comprising:

in an upsetting operation, forming

a reduced diameter portion of a substantially cylindrical member, which eventually defines the shaft, and

a large diameter portion of the substantially cylindrical member with an axially inwardly depressed recess defined in an end face of the large diameter portion, the recess having a tapered peripheral wall face, which eventually defines a general shape of each of the chamfered portions, using an upsetting technique;

in a cup forming operation, forming a cup in the substantially cylindrical member by a combined pushing including a forward pushing and a rearward container pushing; and

in a drawing operation, shaping the large diameter portion to a final design dimension and shape using a drawing technique,

said upsetting operation being carried out prior to the cup forming operation, and said cup forming operation being carried out prior to said drawing operation.

2. (Currently Amended) A method of manufacturing an outer race used in a constant velocity universal joint of a tripod type, said constant velocity universal joint comprising a cup body and a shaft extending axially outwardly from a bottom of the cup body in a direction opposite to an open end thereof, said cup body having an inner peripheral surface formed with three axially extending track grooves, said cup body further including a radially outwardly protruding wall portion, aligned with each of the track grooves, and a radially inwardly depressed wall portion aligned with a reduced diameter portion of a peripheral wall of the cup body between each of the track grooves, said protruding and depressed wall portions being so defined as to alternate with each other in a direction substantially circumferentially of the cup body, each of the reduced diameter portions of the peripheral wall of the cup body adjacent the open end of the latter having a chamfered portion defined at a peripheral lip region of the open end of the cup body,

said method comprising:

an upsetting operation to make a generally elongated intermediate member having a small diameter portion and a large diameter portion with an axially inwardly depressed recess defined in an end face of the large diameter portion remote from the small diameter portion, said recess having a tapered peripheral wall face, which defines a general shape of each of the chamfered portions;

a cup forming operation performed subsequent to the upsetting operation, to shape the elongated intermediate member to a shape having the cup body by a combined pushing method including a forward pushing and a rearward container pushing; and

a drawing operation to shape the cup body to a final design dimension and shape by a drawing technique.

3. (Previously Presented) The outer race manufacturing method as claimed in Claim 2, wherein the cup forming operation is performed by the combined pushing method using a die to form the shaft and the cup body, and a straight punch to form the track grooves and the reduced diameter portions between the track grooves.

4. (Previously Presented) The outer race manufacturing method as claimed in Claim 2, wherein the drawing operation is carried out by using a die to form the cup body, and a punch to form the track grooves, the reduced diameter portions between the neighboring track grooves, and the chamfered portion at one end of each of the reduced diameter portions

adjacent the open end of the cup body.

5. (Previously Presented) The outer race manufacturing method as claimed in Claim 3, wherein the drawing operation is carried out by using a die to form the cup body, and a punch to form the track grooves, the reduced diameter portions between the neighboring track grooves, and the chamfered portion at one end of each of the reduced diameter portions adjacent the open end of the cup body.

6. (Previously Presented) The outer race manufacturing method as claimed in Claim 2, further comprising an axial pushing operation, performed prior to the upsetting operation, to axially push a cylindrical rod member to form the small diameter portion and the large diameter portion of the elongated intermediate member, as well as an intermediate portion connecting the small and large diameter portions together and flaring outwardly in a direction from the small diameter portion towards the large diameter portion.

7. (Cancelled)

8. (Previously Presented) A method, of manufacturing an outer race used in a constant velocity universal joint of a tripod type, said outer race including a cup body having an inner peripheral surface with axially extending track grooves, a radially outwardly protruding wall portion, aligned with each of the track grooves, and a radially inwardly depressed wall portion aligned with a reduced diameter portion of a peripheral wall of the cup body between each of the track grooves, the protruding and depressed wall portions being defined to alternate in a direction substantially circumferentially of the cup body, each of the reduced diameter portions of the peripheral wall of the cup body adjacent the open end of the latter having a chamfered portion defined at a peripheral lip region of an open end of the cup body, the method comprising:
in an upsetting operation, forming a recess in an intermediate member, the recess having a tapered peripheral wall face, which defines a general shape of the chamfered portion;
subsequent to the forming of the recess in the intermediate member, shaping the intermediate member to a shape having the cup body; and
subsequent to the shaping of the intermediate member to the shape having the cup body, shaping the cup body to a final design dimension and shape by a drawing technique.

9. (Currently Amended) A method of manufacturing an outer race used in a

constant velocity universal joint of a tripod type, the outer race including a cup body having a chamfered portion defined at a peripheral lip region of an open end of the cup body, and a track groove and reduced diameter portion, the method comprising:

upsetting a recess in an end portion of an intermediate body, the recess defining a general shape of the chamfered portion; and

subsequent to the upsetting, ~~deepening the recess to form~~ forming the cup body track groove and reduced diameter portion while leaving the general shape of the chamfered portion untreated.

10. (Currently Amended) The method according to claim 9, wherein the track groove and reduced diameter portion ~~cup body~~ is ~~deepened~~ formed by a straight punch.

11. (Currently Amended) A method of manufacturing an outer race used in a constant velocity universal joint of a tripod type, the outer race including a cup body having a chamfered portion defined at a peripheral lip region of an open end of the cup body, and a track groove and reduced diameter portion, the method comprising:

upsetting a recess in an end portion of an intermediate body, the recess having a peripheral wall that tapers from a mouth to an end surface; and

subsequent to the upsetting, forming the track groove and reduced diameter portion ~~cup body~~ in the end surface while leaving the tapered peripheral wall untreated.

12. (Currently Amended) The method according to claim 11, wherein the track groove and reduced diameter portion ~~cup body~~ is formed by a straight punch.

13. (Currently Amended) A method of manufacturing an outer race used in a constant velocity universal joint of a tripod type, the outer race including a cup body having a chamfered portion defined at a peripheral lip region of an open end of the cup body, and a track groove and reduced diameter portion, the method comprising:

upsetting a recess in an end portion of an intermediate body, the recess having a peripheral wall portion tapering from the end portion to a depth of the recess; and

subsequent to the upsetting, forming the track groove and reduced diameter portion ~~cup body~~ in the recess while leaving the tapered peripheral wall portion untreated.

14. (Currently Amended) The method according to claim 13, wherein the track

groove and reduced diameter portioncup body is formed by a straight punch.

15. (New) A method of manufacturing an outer race used in a constant velocity universal joint of a tripod type, the outer race including a cup body having a chamfered portion defined at a peripheral lip region of an open end of the cup body, and a cup portion defining a closed end of the cup body, the method comprising:

upsetting the chamfered portion in an end portion of an intermediate body; and

subsequent to the upsetting, forming the cup portion while leaving the general shape of the chamfered portion untreated.